

Patent  
Attorney's Docket No. 000600-016

**REMARKS/ARGUMENTS**

Applicants wish to thank Examiners Carrillo and Barr for the telephone interviews of December 13, 2005. The purpose of the interviews was to request that the finality of the outstanding Office Action be withdrawn. In support thereof, applicants' representative noted that the amendments filed September 26, 2005, merely added a recitation that the pH of the solution is below 7. He further noted that this recitation did not alter the scope of the claims because the claims *inherently* require the pH to be below 7 due to the *previously presented* recitation of an acid. An acid cannot be present in a basic solution because it will be instantly neutralized to form the corresponding acid salt.

Examiner Barr requested evidence that it is not possible to have an acid in a basic solution. Submitted herewith is an excerpt from "The Condensed Chemical Dictionary" confirming this principle of chemistry. Under the heading "neutralization," it states:

An aqueous solution containing an excess of hydronium ions is called acidic....An aqueous solution containing an excess of hydroxyl ions is called basic....No aqueous solution can contain an excess of both hydronium and hydroxyl ions, because when these ions collide, a proton is immediately transferred from the hydronium to the hydroxyl ion, and both become water molecules.

This excerpt confirms that the presence of an acid in a solution, as claimed by applicants, inherently requires the pH to be below 7, i.e., it inherently requires the solution to be acidic. If the solution were basic, i.e., if it had a pH *above* 7, then any acid initially present would be instantly neutralized to the acid salt.

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In view of this, the finality of the December 12, 2005 Office Action was improper, as new art was cited and applied even though applicants did not alter the scope of the claims. Stated differently, the amendments to the claims did *not* necessitate a new ground of rejection.

Applicants therefore respectfully request that the finality of the Office Action be withdrawn.

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*The*  
*Condensed Chemical*  
*Dictionary*

*TENTH EDITION*

*Revised by*

*GESSNER G. HAWLEY*



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## "NESOL"

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animals and man. Atropine sulfate is used in the treatment of nerve gas poisoning. The principal German nerve gases were sarin, soman, tabun (q.v.). Many modern pesticides have the same general structure. See also insecticide; parathion.

"Nesol."<sup>420</sup> Trademark for a commercial dipentene consisting essentially of monocyclic terpene hydrocarbons.

Nessler's reagent. Solution of mercuric iodide in potassium iodide, used in detecting the presence of ammonia, particularly in very small amounts. Hazard: Highly toxic.

"Neto."<sup>492</sup> Trademark for a dual acid-enzyme converted product with a dextrose equivalent of approximately 42. Has a maltose content three times that of an acid-converted corn syrup of the same degree of conversion. Used in confections.

Neuberg blue. A mixture of copper blue (powdered azurite) and an iron blue (Prussian blue). It can be more easily ground in oil than pure copper blue.

neurine  $\text{CH}_2\text{:CHN}(\text{CH}_3)_3\text{OH}$  (trimethylvinylammonium hydroxide). A poisonous ptomaine formed during putrefaction by the dehydration of choline. Properties: Syrupy liquid; fishy odor; absorbs carbon dioxide from the air; soluble in water and alcohol. Hazard: Highly toxic. Use: Biochemical research.

neutral. (1) Of particles, without electric charge. See neutron; atom.

(2) Of solutions, neither acidic nor basic. See pH.

neutralization. A chemical reaction in which water is formed by mutual destruction of the ions that characterize acids and bases when both are present in an aqueous solution, i.e.,  $\text{H}^+ + \text{OH}^- \rightarrow \text{H}_2\text{O}$ , the remaining product being a salt. R. T. Sanderson states: "An aqueous solution containing an excess of hydronium ions is called acidic. It readily releases protons to electron-donating substances. . . . An aqueous solution containing an excess of hydroxyl ions is called basic. It readily accepts protons from substances that can release them, and is in general an excellent donor. . . . No aqueous solution can contain an excess of both hydronium and hydroxyl ions, because when these ions collide, a proton is immediately transferred from the hydronium to the hydroxyl ion, and both become water molecules."

Neutralization occurs with both (a) inorganic and (b) organic compounds:

(a)  $\text{Ca}(\text{OH})_2 + \text{H}_2\text{SO}_4 \rightarrow \text{CaSO}_4 + 2\text{H}_2\text{O}$ ;

(b)  $\text{HCOOH} + \text{NaHCO}_3 \rightarrow \text{HCOONa} + \text{CO}_2 + \text{H}_2\text{O}$ . It should be noted that neutralization can occur without formation of water, as in the reaction

$\text{CaO} + \text{CO}_2 \rightarrow \text{CaCO}_3$ . Neutralization does not mean the attaining of pH 7.0; rather it means the equivalence point for an acid-base reaction. When a strong acid reacts with a weak base, the pH will be

below 7.0, and when a strong base reacts with a weak acid, the pH will be above 7.0.

neutral oil. A lubricating oil of medium or low viscosity obtained by distillation and dewaxing of crude petroleum or its cracking products.

neutral red (toluylene red)  $(\text{CH}_3)_2\text{NC}_6\text{H}_4\text{N}_2\text{C}_6\text{H}_4\text{CH}_2\text{NH}_2 \cdot \text{HCl}$  (tricyclic). 5-Amino-7-(dimethylamino)-2-methylphenazinemmonium hydrochloride. C.I. No. 50040.

Properties: Green powder; dissolves in water or alcohol to give red color.

Use: Acid-base indicator in the range pH 6.8–8.0 (red in acid, yellow brown in alkali); biological stain.

"Neutrol."<sup>217</sup> Trademark for an acid-activated clay used as decolorizing adsorbent for vegetable and animal fats and oils. See also "Filtrol."

"Neutrolox."<sup>204</sup> Trademark for a high-grade ammonium chloride used in textile finishing plants.

Uses: To neutralize textiles containing caustic soda from mercerizing, scouring, or bleaching operations.

neutron. Discovered by Chadwick in 1932, the neutron is a fundamental particle of matter having a mass of 1.009 but no electric charge. It is a constituent of the nucleus of all elements except hydrogen; the number of neutrons present being the difference between the mass number and the atomic number of the element. Neutrons may be liberated from the nucleus by fission (q.v.) of uranium-235, plutonium-239, and a few other elements, each nucleus yielding an average of 2.5 neutrons; they can also be produced by bombardment of other elements, e.g. beryllium, with positively charged particles.

As free neutrons are uncharged they have tremendous penetrating power as a result of their electrical neutrality; hence they have a highly damaging effect on living tissue, requiring the use of shielding (q.v.) of all equipment in which they are produced. Neutrons directly emitted from atomic nuclei are termed "fast"; it is these that bring about the chain reaction in the atomic bomb. In a nuclear power reactor where a less rapid reaction is desired, the energy of fast neutrons is partially absorbed by the moderator (q.v.), and the neutrons so retarded are called "slow" or thermal. See also electron; proton; fission.

Uses: Nuclear fission; manufacture of plutonium; radioactive isotopes; activation analysis.

neutron activation analysis. See activation analysis.

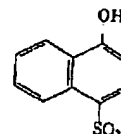
neutron diffraction. See diffraction, neutron.

"Neutronyx."<sup>228</sup> Trademark for a group of nonionic detergents composed of alkylphenol polyglycol ethers containing ethylene-oxide, or of polyethylene glycol fatty acid esters. "Neutronyx" S-20 and S-30 are anionics, the ammonium and sodium salts of a sulfated alkylphenol polyglycol ether. Uses: Detergents; wetting, emulsifying, dispersing agents.

"Nufroscents."<sup>128</sup> Trademark for perfumes designed particularly for use in water-soluble air-conditioning apparatus devices. Also available in solid form.

"Nevinol."<sup>21</sup> Trademark for epoxy resins. Used in adhesives, coatings, special inks and varnishes.

Neville-Winter acid (1-naphthyl-2-naphtholsulfonic acid; 1-



Properties: Transparent plates. M.P. 170°C.

Derivation: From sodium salt by hydrolysis of the amino group. Use: Azo dye intermediate, e.g.

"Neyindene."<sup>21</sup> Trademark for epoxy-indene resins of extremely hard compounds, fast-drying inks, aluminum paints and enamels.

"Neyinol."<sup>21</sup> Trademark for a solvent oil used as a stable plasticizer; also used in fly paper, aluminum pastes, water-proof rubber-resin finishes.

Newtonian flow. See liquid, Newtonian.

"NFB."<sup>28</sup> Trademark for nonfluorinated bath based on phosphorus.

NPA. Abbreviation for National Association (q.v.).

Symbol for nickel.

"Nect."<sup>214</sup> Trademark for various products, including aluminum foil, acetate, potassium acetate, sodium acetate, zinc acetate and "Nect" (q.v.).

"Nect."<sup>214</sup> Trademark for fungicides. See dimethyl dithiocarbamate control.

Nicotinic acid; pyridine-3-carboxylic acid. The antipellagra agent. It is believed necessary for the prevention and cure of protein and carbohydrate